

## Surface Mount Type

**SP-Cap**

Series:FD,CD,UD,UE

Country of Origin



Japan

Singapore



## ■ Features Low ESR

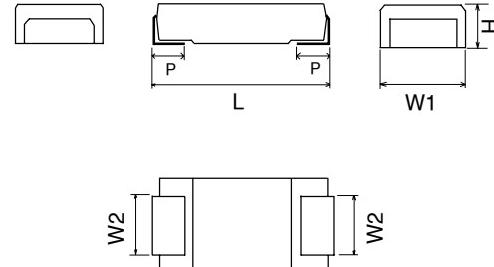
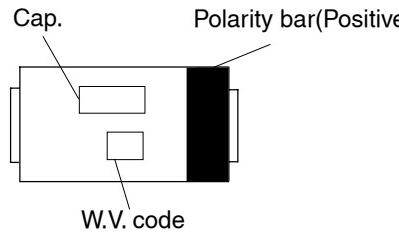
Excellent Noise-absorbent Characteristics

## ■ Specification

Series & Size Code	FD	CD	UD	UE		
Category Temp. Range	-40 to 105°C					
Rated W.V. Range	2 to 12.5V.DC	2 to 16V.DC	2 to 8V.DC	2 to 8V.DC		
Nominal Cap. Range	15 to 68μF	2.2 to 150μF	68 to 330μF	100 to 470μF		
Capacitance Tolerance	±20 %					
DC Leakage Current	I ≤ 0.06 CV 2minutes(2 to 4V.DC) I ≤ 0.04CV or 3μA 2minutes(6.3 to 16V.DC) (Whichever is greater)					
Surge Voltage	Rated Working Voltage × 1.25 (15 to 35°C)					
$\tan \delta$	$\leq 0.06(120\text{Hz}/+20^\circ\text{C})$		$\leq 0.10(120\text{Hz}/+20^\circ\text{C})$			
Endurance (105 °C1000hours W.V.)	After applying rated working voltage for 1000 hours at 105±2°C, and then being stabilized at +20°C, capacitor shall meet the following limits.					
	Capacitance change	±10% of initial measured value				
	$\tan \delta$	$\leq$ Initial specified value				
	DC leakage current	$\leq$ Initial specified value				
Moisture resistance	After storing for 500 hours at 60°C,90%R.H.					
	Capacitance change of initial measured value	2, 2.5V.DC +70, -20%	4 V.DC +60, -20%	6.3V.DC +50, -20%	8 to 16V.DC +40, -20%	
	$\tan \delta$	$\leq$ 200% of initial specified value				
	DC leakage current	$\leq$ Initial specified value				

## ■ Marking

## ■ Dimensions in mm(not to scale)



(mm)

Series & Size Code	L±0.2	W1±0.2	W2±0.1	H	P±0.3
FD	7.3	4.3	2.4	1.1±0.1	1.3
CD	7.3	4.3	2.4	1.8±0.1	1.3
UD	7.3	4.3	2.4	2.8±0.2	1.3
UE	7.3	4.3	2.4	4.2±0.1	1.3

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### ■ Standard Products

Series & Size Code	Rated W.V. (V.DC)	Capacitance (±20%) (μF)	Case Size			Specification		Part number	Min.Packaging Q'ty (pcs)
			L (mm)	W (mm)	H (mm)	Ripple current (A r.m.s./100kHz +20 to +105 °C )	ESR Ω (100kHz/+20°C)		
FD	2	68	7.3	4.3	1.1	2.0	0.028	EEFFD0D680R	3500
	2.5	56	7.3	4.3	1.1	2.0	0.028	EEFFD0E560R	3500
	4	39	7.3	4.3	1.1	2.0	0.028	EEFFD0G390R	3500
		47	7.3	4.3	1.1	2.0	0.028	EEFFD0G470R	3500
	6.3	33	7.3	4.3	1.1	2.0	0.028	EEFFD0J330R	3500
	8	22	7.3	4.3	1.1	2.0	0.028	EEFFD0K220R	3500
CD	2	15	7.3	4.3	1.1	1.4	0.040	EEFFD1B150R	3500
		100	7.3	4.3	1.8	2.5	0.018	EEFCD0D101R	3500
		100	7.3	4.3	1.8	2.7	0.015	EEFCD0D101XR	3500
		120	7.3	4.3	1.8	2.5	0.018	EEFCD0D121R	3500
		120	7.3	4.3	1.8	2.7	0.015	EEFCD0D121XR	3500
	2.5	150	7.3	4.3	1.8	2.5	0.018	EEFCD0D151R	3500
		82	7.3	4.3	1.8	2.5	0.018	EEFCD0E820R	3500
		82	7.3	4.3	1.8	2.7	0.015	EEFCD0E820XR	3500
		100	7.3	4.3	1.8	2.5	0.018	EEFCD0E101R	3500
		100	7.3	4.3	1.8	2.7	0.015	EEFCD0E101XR	3500
	4	120	7.3	4.3	1.8	2.5	0.018	EEFCD0E121R	3500
		56	7.3	4.3	1.8	2.5	0.018	EEFCD0G560R	3500
		56	7.3	4.3	1.8	2.7	0.015	EEFCD0G560XR	3500
		68	7.3	4.3	1.8	2.5	0.018	EEFCD0G680R	3500
		68	7.3	4.3	1.8	2.7	0.015	EEFCD0G680XR	3500
		82	7.3	4.3	1.8	2.5	0.018	EEFCD0G820R	3500
		82	7.3	4.3	1.8	2.7	0.015	EEFCD0G820XR	3500
	6.3	100	7.3	4.3	1.8	1.8	0.025	EEFCD0G101R	3500
		10	7.3	4.3	1.8	1.4	0.055	EEFCD0J100R	3500
		22	7.3	4.3	1.8	1.6	0.040	EEFCD0J220R	3500
		33	7.3	4.3	1.8	2.0	0.028	EEFCD0J330R	3500
		47	7.3	4.3	1.8	2.5	0.018	EEFCD0J470R	3500
		47	7.3	4.3	1.8	2.7	0.015	EEFCD0J470XR	3500
		68	7.3	4.3	1.8	2.5	0.018	EEFCD0J680R	3500
		68	7.3	4.3	1.8	2.7	0.015	EEFCD0J680XR	3500
	8	8.2	7.3	4.3	1.8	1.4	0.055	EEFCD0K8R2R	3500
		15	7.3	4.3	1.8	1.6	0.040	EEFCD0K150R	3500
		22	7.3	4.3	1.8	2.0	0.028	EEFCD0K220R	3500
		33	7.3	4.3	1.8	2.5	0.018	EEFCD0K330R	3500
		47	7.3	4.3	1.8	1.8	0.025	EEFCD0K470R	3500
	12.5	4.7	7.3	4.3	1.8	1.0	0.080	EEFCD1B4R7R	3500
		10	7.3	4.3	1.8	1.0	0.060	EEFCD1B100R	3500
		15	7.3	4.3	1.8	1.3	0.050	EEFCD1B150R	3500
		22	7.3	4.3	1.8	1.6	0.030	EEFCD1B220R	3500
	16	2.2	7.3	4.3	1.8	1.0	0.110	EEFCD1C2R2R	3500
		4.7	7.3	4.3	1.8	1.0	0.080	EEFCD1C4R7R	3500
		6.8	7.3	4.3	1.8	1.0	0.070	EEFCD1C6R8R	3500
		8.2	7.3	4.3	1.8	1.3	0.045	EEFCD1C8R2R	3500
UD	2	180	7.3	4.3	2.8	3.0	0.015	EEFUD0D181R	2000
		180	7.3	4.3	2.8	3.3	0.012	EEFUD0D181XR	2000
		220	7.3	4.3	2.8	3.0	0.015	EEFUD0D221R	2000
		220	7.3	4.3	2.8	3.3	0.012	EEFUD0D221XR	2000
		270	7.3	4.3	2.8	3.0	0.015	EEFUD0D271R	2000
		270	7.3	4.3	2.8	3.3	0.012	EEFUD0D271XR	2000
		330	7.3	4.3	2.8	3.0	0.015	EEFUD0D331R	2000

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### ■ Standard Products

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			L (mm)	W (mm)	H (mm)	Ripple current (A r.m.s./100kHz +20 to +105 °C )	ESR Ω (100kHz/+20°C)		
UD	2	330	7.3	4.3	2.8	3.3	0.012	EEFUD0D331XR	2000
		150	7.3	4.3	2.8	3.0	0.015	EEFUD0E151R	2000
		150	7.3	4.3	2.8	3.3	0.012	EEFUD0E151XR	2000
		180	7.3	4.3	2.8	3.0	0.015	EEFUD0E181R	2000
		180	7.3	4.3	2.8	3.3	0.012	EEFUD0E181XR	2000
		220	7.3	4.3	2.8	3.0	0.015	EEFUD0E221R	2000
		220	7.3	4.3	2.8	3.3	0.012	EEFUD0E221XR	2000
		270	7.3	4.3	2.8	3.0	0.015	EEFUD0E271R	2000
	4	120	7.3	4.3	2.8	3.0	0.015	EEFUD0G121R	2000
		120	7.3	4.3	2.8	3.3	0.012	EEFUD0G121XR	2000
		150	7.3	4.3	2.8	3.0	0.015	EEFUD0G151R	2000
		150	7.3	4.3	2.8	3.3	0.012	EEFUD0G151XR	2000
		180	7.3	4.3	2.8	2.5	0.018	EEFUD0G181R	2000
	6.3	100	7.3	4.3	2.8	3.0	0.015	EEFUD0J101R	2000
		100	7.3	4.3	2.8	3.3	0.012	EEFUD0J101XR	2000
		120	7.3	4.3	2.8	3.0	0.015	EEFUD0J121R	2000
		120	7.3	4.3	2.8	3.3	0.012	EEFUD0J121XR	2000
		150	7.3	4.3	2.8	2.5	0.018	EEFUD0J151R	2000
	8	68	7.3	4.3	2.8	3.0	0.015	EEFUD0K680R	2000
		100	7.3	4.3	2.8	2.5	0.018	EEFUD0K101R	2000
UE	2	270	7.3	4.3	4.2	3.3	0.012	EEFUE0D271R	2000
		270	7.3	4.3	4.2	3.5	0.010	EEFUE0D271XR	2000
		330	7.3	4.3	4.2	3.3	0.012	EEFUE0D331R	2000
		330	7.3	4.3	4.2	3.5	0.010	EEFUE0D331XR	2000
		390	7.3	4.3	4.2	3.3	0.012	EEFUE0D391R	2000
		390	7.3	4.3	4.2	3.5	0.010	EEFUE0D391XR	2000
		470	7.3	4.3	4.2	3.3	0.012	EEFUE0D471R	2000
		470	7.3	4.3	4.2	3.5	0.010	EEFUE0D471XR	2000
	2.5	220	7.3	4.3	4.2	3.3	0.012	EEFUE0E221R	2000
		220	7.3	4.3	4.2	3.5	0.010	EEFUE0E221XR	2000
		270	7.3	4.3	4.2	3.3	0.012	EEFUE0E271R	2000
		270	7.3	4.3	4.2	3.5	0.010	EEFUE0E271XR	2000
		330	7.3	4.3	4.2	3.3	0.012	EEFUE0E331R	2000
		330	7.3	4.3	4.2	3.5	0.010	EEFUE0E331XR	2000
		390	7.3	4.3	4.2	3.3	0.012	EEFUE0E391R	2000
	4	180	7.3	4.3	4.2	3.3	0.012	EEFUE0G181R	2000
		180	7.3	4.3	4.2	3.5	0.010	EEFUE0G181XR	2000
		220	7.3	4.3	4.2	3.3	0.012	EEFUE0G221R	2000
		220	7.3	4.3	4.2	3.5	0.010	EEFUE0G221XR	2000
		270	7.3	4.3	4.2	3.0	0.015	EEFUE0G271R	2000
	6.3	150	7.3	4.3	4.2	3.3	0.012	EEFUE0J151R	2000
		150	7.3	4.3	4.2	3.5	0.010	EEFUE0J151XR	2000
		180	7.3	4.3	4.2	3.3	0.012	EEFUE0J181R	2000
		180	7.3	4.3	4.2	3.5	0.010	EEFUE0J181XR	2000
		220	7.3	4.3	4.2	3.0	0.015	EEFUE0J221R	2000
	8	100	7.3	4.3	4.2	3.3	0.012	EEFUE0K101R	2000
		150	7.3	4.3	4.2	3.0	0.015	EEFUE0K151R	2000

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